Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method of processing a data signal comprising symbols each representing a plurality of data bits, the method comprising:

demodulating the data signal to determine a hard value of each symbol;

mapping the hard value of each of the symbols to a plurality of data bits, each data bit having an assigned confidence value based on a mapping table defining for each symbol hard value a plurality of data bits each having an assigned confidence ~~value;~~ value, the mapping including assigning an increased confidence value to a bit if bits in a same position in adjacent symbols are the same as the bit; and

effecting convolutional decoding of a bit stream associated with the assigned confidence values.

2. (Previously Presented) A method according to claim 1 wherein the mapping the hard value of each of the symbols to a plurality of data bits includes using a Gray code.

3. (Previously Presented) A method according to claim 1, further comprising:

incorporating data on the mapping in a look-up table for reference.

4. (Previously presented) A method according to claim 1 comprising re-coding hard decisions as an (I,Q) pair and taking soft decisions therefrom.

5. (Previously Presented) A method according to claim 1 comprising demodulation by decision feedback equalization with whitening matched filtering.

6. (Previously Presented) A method according to claim 1 comprising using a digital processor for equalization.

7. (Previously Presented) A method according to claim 1 using dedicated signal processing hardware for equalization.

8. (Previously presented) A method according to claim 1 comprising de-interleaving, de-puncturing and incremental redundancy steps before convolutional decoding.

9. (Currently Amended) A non-transitory computer program product having contents directly loadable into the internal memory of a digital computer, the contents comprising software code portions for processing a data signal, the data signal comprising symbols each representing a plurality of data bits, when said code portions are run by a computer carrying out the steps of:

demodulating the data signal to determine a hard value of each of the symbols;

mapping the hard value of each of the symbols to a plurality of data bits, each data bit having an assigned confidence value based on a mapping table defining for each symbol hard value a plurality of data bits each having an assigned confidence ~~value;~~ value, the mapping including assigning an increased confidence value to a bit if bits in a same position in adjacent symbols are the same as the bit; and

effecting convolutional decoding of a bit stream associated with the assigned confidence values.

10. (Currently Amended) An apparatus for processing a data signal comprising symbols each representing a plurality of data bits, the apparatus comprising:

means to receive the data signal;

means to demodulate the data signal to determine a hard value of each of the symbols;

mapping means for mapping the hard value of each symbol to a plurality of bits, each bit having an assigned confidence value based on a mapping table defining for each symbol hard value a plurality of data bits each having an assigned confidence ~~value;~~ value, wherein an increased confidence value is assigned to a bit if bits in a same position in adjacent symbols are the same as the bit; and

means for effecting convolutional decoding of a bit stream associated with the assigned confidence values.

11. (Previously Presented) An apparatus according to claim 10 wherein the mapping means is adapted to map the hard value of each of the symbols to a plurality of data bits by a Gray code.

12. (Previously Presented) An apparatus according to claim 10, further comprising a look-up table incorporating data on the mapping.

13. (Previously Presented) An apparatus according to claim 10 comprising means to re-code hard decisions as an (I,Q) pair and means to take soft decisions therefrom.

14. (Previously Presented) An apparatus according to claim 10 comprising demodulation by decision feedback equalization with whitening matched filtering.

15. (Previously Presented) An apparatus according to claim 10 comprising a digital processor for equalization.

16. (Previously Presented) An apparatus according to claim 10 comprising dedicated signal processing hardware for equalization.

17. (Previously Presented) An apparatus according to claim 10 comprising means to de-interleave, depuncture, and effect incremental redundancy before convolutional decoding.

18.-21. (Canceled)

22. (Previously Presented) The non-transitory computer program product of claim 9 wherein the mapping comprises retrieving confidence values from a look-up table.

23. (Previously Presented) The non-transitory computer program product of claim 22 wherein the mapping further comprises interpolation between confidence values in the look-up table.

24. (Previously Presented) The method of claim 1 wherein the mapping further comprises interpolation between confidence values stored in a look-up table.

25. (Previously Presented) The apparatus of claim 10 wherein the mapping means is configured to interpolate between confidence values stored in a look-up table.

26. (Currently Amended) An apparatus for processing a data signal comprising symbols representing data bits, the apparatus comprising:

a demodulator configured to extract a hard value of each of the symbols from the signal;

a symbol mapper configured to map the hard value of each symbol to a respective plurality of bits each having a confidence value based on a mapping table defining for each symbol hard value a plurality of data bits each having an assigned confidence ~~value;~~ value, wherein the symbol mapper is configured to assign an increased confidence value to a bit if bits in a same position in adjacent symbols are the same as the bit; and

a convolutional decoder configured to decode a bit stream associated with the assigned confidence values.

27. (Previously Presented) The apparatus of claim 26 wherein the symbol mapper is configured to map the hard value of each of the symbols to the respective plurality of bits using a Gray code.

28. (Previously Presented) The method of claim 1 wherein the data signal comprises 8-PSK signals and each confidence value is determined from a set [-α, -1, 1, α], where α is a constant.

29. (Previously Presented) The method of claim 28 wherein the value of α is 1.7.